Patent claims

1. A digital-analog converter having:
a DEM logic device (10) for generating at least two digital output data items (13, 14) from digital input data (11) on the basis of a predetermined algorithm to determine an initial cell and a final cell in the array arrangement (22), between which there are situated cells (24) with energy sources (30) to be activated;
a decoder device (16) for decoding the at least two digital output data items (13, 14) from the DEM device (10) into actuation signals (17, 17', 18, 18', 19, 19' 20, 20', 21, 21') in order to activate the cells (24) which are to be activated; and

an array arrangement (22) of cells (23) for outputting at least one quantized analog signal (25, 25') on the basis of the actuation signals (17, 17', 18, 18', 19, 19' 20, 20', 21, 21').

2. The digital-analog converter as claimed in claim 1,
wherein
the array arrangement (22) has single cells (23) with a respective current source as energy source (30).

3. The digital-analog converter as claimed in claim 1 or 2,
wherein
the DEM logic device (10) has a parallel input for supplying the digital input data (11), which have a predetermined bit length.

4. The digital-analog converter as claimed in one of the preceding claims,
wherein
the output of the DEM logic device (10) has two digital output data items (13, 14), an arithmetic sign signal (15) and a clock signal (12) which are coupled to the

decoder device (16).

5. The digital-analog converter as claimed in one of the preceding claims,
wherein
the output of the decoder device (16) has two row actuation signals (18, 20) and three column actuation signals (17, 19, 21) and preferably two associated complementary row actuation signals (18', 20') and three complementary column actuation signals (17', 19', 21') which are coupled to the array arrangement (22) for the purpose of activating energy sources (30) for predetermined cells (24).

6. The digital-analog converter as claimed in one of the preceding claims,
wherein
the array arrangement (22) has two mutually inverse quantized analog output signals (25, 25').

7. The digital-analog converter as claimed in one of the preceding claims,
wherein
the array arrangement (22) has single cells (23) with a respective local decoder device (27) whose input respectively has two row actuation signals (18, 20) and three column actuation signals (17, 19, 21) and preferably two associated complementary row actuation signals (18', 20') and three complementary column actuation signals (17', 19', 21').

8. The digital-analog converter as claimed in one of the preceding claims,
wherein
the array arrangement (22) has a respective edge length of at least 64 cells (23), corresponding to a bit length for the input signal of at least 12 bits.

9. A method for digital-analog conversion having the

following steps:

at least two digital output data items (13, 14) are generated from digital input data (11) in a DEM logic device (10), with an initial cell and a final cell in the array arrangement (22), between which there are situated cells (24) with energy sources (30) to be activated, being determined from the digital input data (11) on the basis of a predetermined algorithm;

the at least two digital output data items (13, 14) from the DEM device (10) are decoded into actuation signals (17, 17', 18, 18', 19, 19' 20, 20', 21, 21') in a decoder device (16) in order to activate the cells (24) which are to be activated; and

at least one quantized analog signal (25, 25') is output on the basis of the actuation signals (17, 17', 18, 18', 19, 19' 20, 20', 21, 21') using an array arrangement (22) of cells (23).

10. The method as claimed in claim 9,
wherein
an initial cell and a final cell in the array arrangement (22), between which there are situated cells (24) with activated energy sources (30), are determined in the DEM logic device (10) from the digital input data (11) on the basis of a predetermined algorithm, and particularly when the activated cells (24) reach the last cell in the array arrangement (22) cells (24) are activated in a manner adjoining the first cell in the array arrangement (22).

11. The method as claimed in claim 10,
wherein
a DWA (Data Weighted Averaging) algorithm or a bi-DWA (bidirectional Data Weighted Averaging) algorithm or an ILA (Individual Level Averaging) algorithm is used in the DEM logic device (10) in order to determine the

cells (24) in the array arrangement (22) which are to be activated.

12. The method as claimed in one of claims 9 to 11, wherein
the output of the DEM logic device (10) generates two digital output data items (13, 14), an arithmetic sign signal (15) and a clock signal (12) which are transmitted to the decoder device (16).

13. The method as claimed in one of claims 9 to 12, wherein
the output of the decoder device (16) generates two row actuation signals (18, 20) and three column actuation signals (17, 19, 21) and preferably two associated complementary row actuation signals (18', 20') and three complementary column actuation signals (17', 19', 21') which activate energy sources (30) in predetermined cells (24) in the array arrangement (22).

14. The method as claimed in one of claims 9 to 13, wherein
the array arrangement (22) outputs two mutually inverted quantized analog output signals (25, 25').

15. The method as claimed in one of claims 9 to 14, wherein
single cells (23) with a respective local decoder device (27) are used in the array arrangement (22), the input of said single cells respectively using two row actuation signals (18, 20) and three column actuation signals (17, 19, 21) and preferably two associated complementary row actuation signals (18', 20') and three complementary column actuation signals (17', 19', 21') in order to actuate an energy source (30) for the cell.

16. The method as claimed in one of claims 9 to 15, wherein

a local decoder device (16) in a cell (23) in the array arrangement (22) connects an energy source (30) to a resistor (31) in the local decoder device (27) when a first column signal (17) and a first row signal (18), or a second column signal (19) and a second row signal (20), or a third column signal (21), are activated.